**Informatics, Ch 4, Data Analytics: Presenting the findings**

# **Manipulating data pg199-223**

**With your chosen MMOS be aware of the requirements of the functions you need to be able to undertake.**

1. **What is the role of Heading styles and CSS sheets?**

Heading styles and CSS sheets allows authors to describe formatting styles once, use the style many times and change styles easily.

# **Formats and Conventions, p 202**

1. **Define the terms format and convention and use an example to distinguish between them.**A format is the form in which information is presented, such as a webpage, pie chart, text in paragraph, comic strip or newspaper article.

Conventions are the accepted techniques that an audience will expect to find when a format is used. Each has its own conventions.

1. **Distinguish between:**
   1. **Mandatory**If you disregard mandatory conventions, you are breaking the law. For example, whether a country chooses to drive on the left side of the road or the right is quite arbitrary. However, once a nation has chosen a side, people who choose to drive in the incorrect lane will be punished for disregarding legal conventions.
   2. **Preferred conventions**Preferred conventions are those where more people have distinct preference about how something should be done. For instance, in a large book, people expect to find page numbers. In reference books, readers would be upset if they found there was no index.
   3. Optional conventions.

Optimal conventions offer you a real choice. Some individuals may prefer to see a book’s page numbers centred at the bottom page, but would not write angry letters to the see a link to the site map at the header of the MMOS rather than at the footer.

1. **Choose four conventions that you think will be important when you design your MMOS.**Four conventions that will be important when designing the MMOS would be pie charts, tables, text and webpages.
2. **Why is it important to follow these conventions?**It is important to follow these conventions because they are beneficial in presenting the data in a way that is readable to the audience and is visually appealing so it doesn’t bore the audience as well.

# **Design principles, p 204 Functionality: Useability**

1. **Briefly describe the principles of:**
   1. Robustness; what are the countermeasures for robustness?  
      Robustness is the solution’s ability to cope with errors during use. The solution should resist crashes, failure and security threats and function correctly in spite of invalid data or a stressful environment. Robustness countermeasures include comprehensive data validation, prevention of errors, and anticipating troublesome user actions.
   2. **Flexibility; how do you build a MMOS to cater for flexibility?**Flexibility refers to the solutions ability to cope with multiple ways of performing tasks. To build the MMOS to cater for flexibility, it is important to build the website without fixed dimensions, and instead let the user determine the page size.
   3. **Ease of use**Ease of use refers to how user-friendly the solution is. Some of these aspects overlap with the appearance design principles. However, when creating, planning and testing the solution, these questions should be asked:  
      -Is it easy for users to intuit the design of the MMOS and perform basic tasks?  
      -Can basic tasks be performed quickly?  
      -Will users remember how the MMOS works when coming back after not visiting for a long period of time?

# **Functionality: Accessibility**

1. **For each of the following principles briefly describe their characteristics.**
   1. **Navigation**Navigation is the clarity, simplicity and intuitiveness of the solutions navigation system. The author must ensure their MMOS can be navigated comfortably by multiple browsers and a touchscreen.
   2. **Error tolerance**Error tolerance refers to the solution’s ability to help users avoid and correct mistakes using clear instructions, and its ability to prevent them making errors in the first place by avoiding allowing them to perform actions that could lead to errors.

# **Functionality: Appearance:**

1. **For each of the appearance principles briefly indicate their nature:**
   1. **Alignment**The alignment of text can be left, right, centre or fully aligned [justified]. Generally, choose one alignment for each page and stick to it. The human eye can detect when an object is only a single pixel out of place vertically or horizontally compared to its neighbours. Text, images and columns should be all aligned precisely.
   2. **Repetition of design elements**The audience will be reassured by repetition in the solution. This does not mean repetition of content and words, but rather the design elements. Using the same logos, icons, typefaces, heading styles, colour schemes, margins, borders and shortcut keys throughout the solution will help the audience trust the predictability and consistency of the solution.
   3. **Contrast**Contrast refers to the visual difference in colour or tone between objects. Greater contrast will make objects appear to stand out more from one another. If there is not enough contrast between two objects, they may appear to blend into each other, making it difficult for the user to see each of them clearly.
   4. **Space**Space refers to the areas around and between objects – text and images. If the solution is cluttered it may be unpleasant to browse. It is important to include all information obtained in theMMOS, but still having the space for the objects to be individually distinguished and navigated through correctly.
   5. **Balance**A solution with a balanced design is visually appealing. Solutions with unbalanced designs can lack the appropriate emphasis, look untidy and may end up discouraging the intended audience fromvisiting them.

# **Generating design ideas, p 209**

1. **What is a design idea? Make a list of ideas you have for your MMOS.**A design idea is a brief, rough outline of a strategy for solving a problem. It lacks the detail and precision of a detailed design, but it points in the general direction of how solution may be created.  
   In my MMOS, I have the idea to use illustrations regarding the reflexes and decision making that video games provide, create a WIX website which will include a page for each stage of the outcome and have a report that validates the conclusion.
2. **List out some creative design techniques.**

**Some creative design techniques include:**

* Brainstorming
* Mind Mapping
* Consulting End Users
* Graphic Organisers
* Attribute Listing
* De Bono’s Six Hats

1. **Describe some tips for creative thinking, p 215**Some tips when it comes to creative thinking includes replacing part of the problem with something else, joining unconnected things together, using an existing component in a different way, reducing the problem right back to its most basic parts to see what is left, comparing other things which resembles the problem and how does the other thing work, letting ideas go and thinking of other things, researching other people who have solved problems similar to the one you have and visualising ideas.

# **Evaluating design ideas, p 218**

1. **Why is it important to evaluate your design ideas before progressing with your project?**It is important to evaluate the design ideas before progressing as some ideas may not be appropriate in the current circumstances.
2. **What are some criteria that could be used to help choose the best design idea?**Some criteria that could be used to help choose the best design idea includes the ease of use, the time it will take to implement, how easily the product can be increased in capacity, the degree in which it copes with constraints, the development cost and future cost, the amount of disruption it will cause the organisation and the amount of training which will be required for the staff.

# **Design tools, p 220**

1. **Briefly describe the purpose of each of the following:**
   1. **IPO charts**  
      An IPO Chart helps to design algorithms in spreadsheets, databases and programs, which can be used o devise formulas, scripts and program codes.
   2. **Mock ups or annotated diagrams**Mock ups or annotated diagrams show the intended appearance of printed output, onscreen information and interfaces.
   3. **Site map**  
      A site map is a hierarchical diagram that shows the pages and links of a website, screens of slideshow or forms in a program.
   4. **Storyboard**  
      A website’s storyboard focuses on site navigation. It shows all pages in the site, but also addsinformation about how objects within those pages are used as navigational links.
   5. **Organisational and hierarchy charts**These charts map out the relative positions of items, or people, in a hierarchy. An organisational chart particularly indicated who has authority, and who reports to whom.
   6. **Layout diagrams**A layout diagram shows the components and their relationship in a system.